AMENDMENTS TO THE CLAIMS

Please replace the pending claims with the following claim listing:

1. **(Currently Amended)** A method of monitoring a dispersion on a transmission optical fiber in a wavelength division multiplexing optical transmission system in which a transmission distance is fixed and the dispersion of the transmission optical fiber has a slope that changes with respect to temperature changes, said method comprising the steps of:

extracting two or more of wavelength channels 1 to n from the transmission optical fiber; and

monitoring dispersions of the extracted wavelength channels, comprising the steps of:

measuring a first dispersion value in the extracted wavelength channels 1 to n (wavelength: λ_{mon1} to λ_{monn}) at a certain temperature T_1(°C);

measuring a second dispersion value in the wavelength channels 1 to n at a certain other temperature T_2(°C);

providing dispersion variation amounts ΔD_{mon1} to ΔD_{monn} in the extracted wavelength channels 1 to n from a difference between the measured first dispersion value and the measured second dispersion value; and

providing a dispersion variation amount at an arbitrary wavelength (λ) based on the provided dispersion variation amounts ΔD_{mon1} to ΔD_{monn};

wherein the steps of extracting and monitoring ~~being~~ are performed by a dispersion monitoring apparatus.

2. **(Canceled)**

3. **(Currently Amended)** The method according to Claim [[2]] 1, wherein the n is 2 and the step of providing the dispersion variation amount calculates a dispersion variation amount $\Delta D(\lambda)$ in an arbitrary wavelength (λ) by the following equation.

$$\Delta D(\lambda) = \frac{\Delta D_{mon2} - \Delta D_{mon1}}{\lambda_{mon2} - \lambda_{mon1}} \bullet (\lambda - \lambda_{mon1}) + \Delta D_{mon1}$$

4. **(Original)** The method according to Claim 1, wherein the step of monitoring the dispersions comprises the steps of:

measuring a first dispersion value in a desired wavelength channel at a certain temperature T1(OC);

measuring a second dispersion value in the desired wavelength channel at a certain other temperature T2 (OC); and

providing a dispersion variation amount in the desired wavelength channel from a difference between the measured first dispersion and the measured second dispersion value.

5. **(Currently Amended)** A method of compensating a temperature dependency of a dispersion slope in a wavelength division multiplexing optical transmission system in which a transmission distance is fixed and the dispersion slope of a transmission optical fiber changes with respect to temperature changes, said method comprising the steps of:

providing the dispersion variation amount $\Delta D(\lambda)$ by the method according to any one of Claims [[2 to]] 1, 3, and 4; and

compensating the temperature dependency of the dispersion slope by using the provided dispersion variation amount $\Delta D(\lambda)$.

6. **(Original)** The method according to Claim 5, wherein the step of compensating the temperature dependency of the dispersion slope comprises the steps of:

dividing a signal light on the transmission optical fiber to one or more wavelength channel groups constituted by at least one wavelength channel; and

compensating the dispersion in accordance with each of the divided one or more wavelength channel groups.

7. **(Original)** The method according to Claim 5, wherein the step of compensating the temperature dependency of the dispersion slope summarizingly compensates a wavelength dependency of the temperature dependency of the dispersion in all of bandwidths in a wavelength division multiplexing optical transmission system.

8. **(Original)** The method according to Claim 6, wherein the step of compensating the dispersion is carried out by using one or more tunable dispersion equalizers with a fiber Bragg grating.

9. **(Original)** The method according to Claim 6, wherein the step of compensating the dispersion is carried out by using one or more tunable dispersion equalizers with a filter.

10. **(Original)** The method according to Claim 7, wherein the step of compensating the temperature dependency of the dispersion slope is carried out by using one or more tunable dispersion equalizers with a fiber Bragg grating.

11. **(Original)** The method according to Claim 7, wherein the step of compensating the temperature dependency of the dispersion slope comprises the step of:

providing a temperature change in a dispersion compensating optical fiber installed at an optical node.

12. **(Currently Amended)** A dispersion monitoring apparatus for monitoring a dispersion on a transmission optical fiber in a wavelength division multiplexing optical transmission system in which a transmission distance is fixed and the dispersion of the transmission optical fiber has a slope that changes with respect to temperature changes, said dispersion monitoring apparatus comprising:

extracting means for extracting two or more of wavelength channels from the transmission optical fiber; and

monitoring means for monitoring dispersions of the extracted wavelength channels, the monitoring means comprising:

means for measuring a first dispersion value in the extracted wavelength channels 1 to n (wavelength: λ_{mon1} to λ_{monn}) at a certain temperature T_1(°C);

means for measuring a second dispersion value in the wavelength channels 1 to n at a certain other temperature T_2(°C);

means for providing dispersion variation amounts ΔD_{mon1} to ΔD_{monn} in the extracted wavelength channels 1 to n from a difference between the measured first dispersion value and the measured second dispersion value; and

means for providing a dispersion variation amount at an arbitrary wavelength (λ) based on the provided dispersion variation amounts ΔD_{mon1} to ΔD_{monn}.

13. **(Currently Amended)** A dispersion slope temperature dependency compensating apparatus for compensating a temperature dependency of a dispersion slope in a wavelength division multiplexing optical transmission system in which a transmission distance is fixed and the dispersion slope of a transmission optical fiber changes with respect to temperature changes, said dispersion slope temperature dependency compensating apparatus comprising:

monitoring means for monitoring dispersions of two or more of wavelength channels on the transmission optical fiber, the monitoring means comprising:

means for measuring a first dispersion value in the extracted wavelength channels 1 to n (wavelength: λ_{mon1} to λ_{monn}) at a certain temperature T_1(°C);

means for measuring a second dispersion value in the wavelength channels 1 to n at a certain other temperature T_2(°C);

means for providing dispersion variation amounts ΔD_{mon1} to ΔD_{monn} in the extracted wavelength channels 1 to n from a difference between the measured first dispersion value and the measured second dispersion value; and

means for providing a dispersion variation amount at an arbitrary wavelength (λ) based on the provided dispersion variation amounts ΔD_{mon1} to ΔD_{monn}; and

compensating means for compensating a wavelength dependency of the temperature dependency of the dispersion in an arbitrary wavelength channel by using the monitored dispersions.

14. **(Original)** The dispersion slope temperature dependency compensating apparatus according to Claim 13, wherein said compensating means comprising:

means for dividing a signal light on the transmission optical fiber into one or more wavelength channel groups constituted by at least one wavelength channel; and

means for compensating the dispersion in accordance with each of the divided one or more wavelength channel groups.

15. **(Original)** The dispersion slope temperature dependency compensating apparatus according to Claim 13, wherein said compensating means summarizingly compensates the wavelength dependency of the temperature dependency of the dispersion in all of bandwidths in a wavelength division multiplexing optical transmission system.

16. **(Original)** The dispersion slope temperature dependency compensating apparatus according to Claim 14, wherein said compensating means includes one or more tunable dispersion equalizers with a fiber Bragg grating.

17. **(Original)** The dispersion slope temperature dependency compensating apparatus according to Claim 14, wherein said compensating means includes one or more tunable dispersion equalizers with a filter.

18. **(Original)** The dispersion slope temperature dependency compensating apparatus according to Claim 15, wherein said compensating means includes one or more tunable equalizers with a fiber Bragg grating.

19. **(Previously Presented)** The dispersion slope temperature dependency compensating apparatus according to Claim 15, wherein said compensating means comprises:

a dispersion compensating optical fiber installed in an optical node; and

means for providing a temperature change to the dispersion compensating optical fiber.